



6712-01

FEDERAL COMMUNICATIONS COMMISSION

47 CFR Part 90

[PS Docket No. 13–209, RM–11663; FCC 16–48]

Emission Mask Requirements for Digital Technologies on 800 MHz NPSPAC Channels; Analog FM Capability on Mutual Aid and Interoperability Channels

AGENCY: Federal Communications Commission.

ACTION: Final rule.

SUMMARY: This document amends the Commission’s rules to guard against interference to critical public safety communications in the 800 MHz National Public Safety Planning Advisory Committee (NPSPAC) band (806-809/851-854 MHz) and to enhance public safety system interoperability in the VHF, UHF and 800 MHz bands by specifying analog FM as the standard emission for use on all interoperability channels in these bands.

DATES: Effective [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]

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SUPPLEMENTARY INFORMATION: This is a summary of the Commission’s Report and Order in PS Docket No. 13-209, FCC 16-48, released on April 25, 2016. The

document is available for download at http://fjallfoss.fcc.gov/edocs_public/. The complete text of this document is also available for inspection and copying during normal business hours in the FCC Reference Information Center, Portals II, 445 12th Street, SW., Room CY-A257, Washington, DC 20554. To request materials in accessible formats for people with disabilities (Braille, large print, electronic files, audio format), send an e-mail to FCC504@fcc.gov or call the Consumer & Governmental Affairs Bureau at 202-418-0530 (voice), 202-418-0432 (TTY).

The Report and Order amends the rules to require digital technologies to comply with Emission Mask H when operated in the 800 MHz National Public Safety Planning Advisory Committee (NPSPAC) band (806–809/851–854 MHz). The Report and Order also amends the rules to require equipment to have analog FM capability when operating on 800 MHz NPSPAC, VHF (150–170 MHz), and UHF (450–470 MHz) public safety mutual aid and interoperability channels. These rule changes will help safeguard public safety licensees in the NPSPAC band from adjacent-channel interference and preserve interoperability in the NPSPAC, VHF and UHF bands. Finally, the Report and Order terminates the existing freeze on equipment authorization announced in the Public Notice, 28 FCC Rcd 12661.

Procedural Matters

A. Final Regulatory Flexibility Analysis

The Final Regulatory Flexibility Analysis required by section 604 of the Regulatory Flexibility Act, 5 U.S.C. 604, is included in Appendix B of the Report and Order.

B. Paperwork Reduction Act of 1995 Analysis

The actions taken in the Report and Order in PS Docket No. 13-209 have been analyzed with respect to the Paperwork Reduction Act of 1995, Pub. L. 104-13, and found to impose no new or modified recordkeeping requirements or burdens on the public.

C. Congressional Review Act

The Commission will send a copy of this Report and Order to Congress and the Government Accountability Office pursuant to the Congressional Review Act (“CRA”), see 5 U.S.C. 801(a)(1)(A).

Final Regulatory Flexibility Analysis

1. As required by the Regulatory Flexibility Act of 1980, as amended (RFA), an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the Notice of Proposed Rulemaking (NPRM). The Commission sought written public comment on the proposals in the NPRM, including comment on the IRFA. The comments received are discussed below. This present Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.

A. Need for, and Objectives of, the Proposed Rules

2. The basic purpose of the Report and Order is to amend the Part 90 technical rules in order to prevent adjacent channel interference and promote interoperable public safety communications. In the Notice of Proposed Rulemaking (NPRM) we proposed to adopt rules that guard against interference to critical public safety communications in the 800 MHz NPSPAC band and enhance public safety system interoperability in the VHF, UHF and 800 MHz bands. Most commenters submit that digital equipment should not be authorized in the NPSPAC band unless it complies with

Emission Mask H because digital transmitters increase the potential for adjacent channel interference and reduce frequency reuse in the limited NPSPAC spectrum. Most commenters also believe that public safety radios should have analog FM capability when operating on the mutual aid and interoperability channels.

3. Based on the record, we conclude that the public interest will best be served by adopting the rules proposed in the NPRM, with certain changes that will reduce regulatory burdens on public safety entities and manufacturers. The rule changes adopted in this Report and Order provide certainty to public safety entities, regional planning committees (RPC), equipment manufacturers, and equipment certification laboratories, and will ensure that licensed facilities operate under uniform technical parameters to maintain the extant interference environment in the NPSPAC band and promote interoperability.

B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA

4. There were no comments raised that specifically addressed the proposed rules and policies presented in the IRFA. Nonetheless, we considered the potential impact of the rules proposed in the IRFA on small entities and reduced the compliance burden for all small entities in order to reduce the economic impact of the rules enacted herein on such entities.

5. First, our decision to apply the H Mask to digital technology is limited to equipment that operates in the sensitive interference environment of the NPSPAC band where 25 kilohertz channels are spaced only 12.5 kilohertz apart. We recognize that the NPSPAC channels are more susceptible to adjacent channel interference due to the 12.5

kilohertz channel spacing relative to the rest of the 800 MHz band where channels are spaced 25 kilohertz apart. Equipment not conforming to the H Mask would increase the potential for adjacent channel interference, require greater geographic separation to mitigate interference and thus reduce spectrum reuse of limited public safety spectrum. Thus, by amending the emission mask rules applicable to the NPSPAC band, we reduce the economic burden on public safety licensees in having to contend with increased adjacent channel interference and decreased spectrum availability.

6. Second, our decision to require analog FM common modulation capability promotes interoperability on the mutual aid channels and the VHF/UHF interoperability channels. In light of the embedded base of analog FM equipment on the mutual aid and VHF/UHF interoperability channels, we believe that requiring a common modulation scheme is a low-cost measure to ensure that these channels remain available during times of crisis.

7. Third, the record shows that the benefits to public safety users of requiring (1) digital technologies to comply with Emission Mask H when operating in the NPSPAC band and (2) equipment to have analog FM capability when operating on 800 MHz, VHF, and UHF public safety mutual aid and interoperability channels exceed the asserted costs of (1) compliance with Emission Mask H, and (2) providing analog FM capability. Additionally, public safety agencies that wish to use non-H Mask compliant digital emissions for non-interoperable communications may apply for authorizations in the 4.5 MHz of 800 MHz interleaved spectrum.

C. Estimate of the Number of Small Entities To Which the Proposed Rules Will Apply

8. The RFA directs agencies to provide a description of, and, where feasible, an estimate of, the number of small entities that may be affected by the rules adopted herein. The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.” In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act (SBA). A “small business concern” is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).

9. Private Land Mobile Radio Licensees. PLMR systems serve an essential role in a range of industrial, business, land transportation, and public safety activities. These radios are used by companies of all sizes operating in all U.S. business categories, and are often used in support of the licensee's primary (non-telecommunications) business operations. For the purpose of determining whether a licensee of a PLMR system is a small business as defined by the SBA, we use the broad census category, Wireless Telecommunications Carriers (except Satellite).

10. The Wireless Telecommunications Carriers (except satellite) industry comprises establishments engaged in operating and maintaining switching and transmission facilities to provide communications via the airwaves. Establishments in this industry have spectrum licenses and provide services using that spectrum, such as cellular phone services, paging services, wireless Internet access, and wireless video

services. The appropriate size standard under SBA rules for the category Wireless Telecommunications Carriers (except satellite) is that a business is small if it has 1,500 or fewer employees. Census data for 2007 show that there were 1,383 such firms that operated for the entire year. Of this total, 1,368 firms had fewer than 1000 employees. Thus, under this category and the associated small business size standard, the Commission estimates that the majority of wireless telecommunications carriers (except satellite) are small.

11. The definition of the Wireless Telecommunications Carriers (except satellite) industry provides that a small entity is any such entity employing no more than 1,500 persons. The Commission does not require PLMR licensees to disclose information about number of employees, so the Commission does not have information that could be used to determine how many PLMR licensees constitute small entities under this definition. We note that PLMR licensees generally use the licensed facilities in support of other business activities, and therefore, it would also be helpful to assess PLMR licensees under the standards applied to the particular industry subsector to which the licensee belongs.

12. As of November 1, 2012, there were 1,185 PLMR licensees operating in the PLMR band between 806-809/851-854 MHz (NPSPAC band) and 686 PLMR licensees operating on the VHF and UHF public safety interoperability channels. We note that any entity engaged in a commercial activity is eligible to hold a PLMR license, and that any revised rules in this context could therefore potentially impact small entities covering a great variety of industries.

13. Small Businesses, Small Organizations, and Small Governmental

Jurisdictions. Our action may, over time, affect small entities that are not easily categorized at present. We therefore describe here, at the outset, three comprehensive, statutory small entity size standards that encompass entities that could be directly affected by the amended rules. As of 2009, small businesses represented 99.7% of the 28.2 million businesses in the United States, according to the SBA. Additionally, a “small organization” is generally “any not-for-profit enterprise which is independently owned and operated and is not dominant in its field.” Nationwide, as of 2007, there were approximately 1,621,315 small organizations. Finally, the term “small governmental jurisdiction” is defined generally as “governments of cities, counties, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand.” Census Bureau data for 2007 indicate that there were 89,527 governmental jurisdictions in the United States. We estimate that, of this total, as many as 88,761 entities may qualify as “small governmental jurisdictions.” Thus, we estimate that most governmental jurisdictions are small.

14. RF Equipment Manufacturers. The Census Bureau defines this category as follows: “This industry comprises establishments primarily engaged in manufacturing radio and television broadcast and wireless communications equipment. Examples of products made by these establishments are: transmitting and receiving antennas, cable television equipment, GPS equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment.” The SBA small business size standard for Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing is all such firms having 750 or fewer employees. According to Census Bureau data for 2007, there were a total of 939

establishments in this category that operated for the entire year. Of this total, 912 had employment of under 500, and an additional 10 had employment of 500 to 999. Thus, under this size standard, the majority of firms can be considered small.

D. Description of Projected Reporting, Recordkeeping, and Other Compliance Requirements

15. The Report and Order adopts two principal rule changes that will affect reporting, recordkeeping and other compliance requirements. The Report and Order retains our 800 MHz NPSPAC emission mask rules and explicitly requires digital emission transmitters to comply with Emission Mask H when operated on 800 MHz NPSPAC channels. The Report and Order also requires mobile and portable transmitters to have analog FM modulation capability on the public safety mutual aid and VHF/UHF interoperability frequencies. Digital emission transmitters have characteristics that differ from analog FM transmitters and, hence, have a greater likelihood of causing adjacent-channel interference. The Commission developed specific emission masks for digital emissions, including Mask H for digital emissions in the 800 MHz NPSPAC band. Industry practice recognizes that (1) digitally-modulated signals must be certified under the H-Mask for use in public safety spectrum and (2) radios intended for use on mutual aid and interoperability channels must be capable of analog FM operation. We expect that large and small manufacturers already comply with these proposed regulations. However, to the extent some manufacturers do not already comply with these regulations and industry standards, we expect that such manufacturers would refrain from marketing their equipment to public safety entities as being in compliance with the Commission's rules and ensure that their equipment performs consistent with these regulations designed to

prevent interference and preserve interoperability. The Commission's equipment certification process will serve to ensure that equipment complies with Emission Mask H when operated in the NPSPAC band and that it has FM modulation capability on public safety mutual aid and VHF/UHF interoperability frequencies. Some manufacturers may submit new or amended applications for equipment certification accompanied by the requisite engineering showings that demonstrate compliance with the rules adopted in the Report and Order. See OMB Control No. 3060-0057.

E. Steps Taken To Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered

16. The RFA requires an agency to describe any significant alternatives that it has considered in developing its approach, which may include the following four alternatives (among others): “(1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance and reporting requirements under the rule for such small entities; (3) the use of performance rather than design standards; and (4) an exemption from coverage of the rule, or any part thereof, for such small entities.”

17. We have evaluated our rule changes in the context of small business entities and find no alternatives, to the benefit of small entities that would achieve our goals of adjacent channel interference avoidance and facilitating nationwide interoperability. Additionally, the rules we adopt are consistent with industry practice and reflect the embedded base of public safety equipment on these channels. Accordingly, we expect most manufacturers and public safety licensees already comply

with our regulations, therefore minimizing any significant economic impact on small entities. We believe that these restrictions on adjacent channel interference and interoperability compliance requirements are the minimum needed, when weighed against the significant benefits to small entities, including public safety entities, that result from the approach we are adopting here. In order to further minimize the economic impact on small entities, the rules require analog FM capability only in subscriber units in order to achieve interoperability.

F. Federal Rules that May Duplicate, Overlap, or Conflict With the Proposed Rules

18. None.

G. Report to Congress

19. The Commission will send a copy of the Report and Order, including this FRFA, in a report to be sent to Congress pursuant to the Congressional Review Act. In addition, the Commission will send a copy of the Report and Order, including this FRFA, to the Chief Counsel for Advocacy of the SBA. A copy of the Report and Order and FRFA (or summaries thereof) is also being published in the Federal Register.

Ordering Clauses

20. Accordingly, IT IS ORDERED, pursuant to Sections 1, 2, 4(i), 4(j), 301, 302, 303, 308, 309(j), and 332 of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 152, 154(i), 154(j), 301, 302, 303, 308, 309(j), and 332, that this Report and Order is hereby ADOPTED. Part 90 of the Commission's rules, 47 CFR Part 90, is revised as set forth in Appendix A to this Report and Order. These rule revisions will take effect 30 days after the date of publication of the text thereof in the Federal Register.

21. IT IS FURTHER ORDERED THAT the equipment authorization freeze announced in the Public Notice, 28 FCC Rcd 12661, SHALL BE TERMINATED on the date the rule revisions as set forth in Appendix A become effective.

22. IT IS FURTHER ORDERED that the Commission's Consumer and Governmental Affairs Bureau, Reference Information Center, SHALL SEND a copy of this Report and Order, including the Final Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

23. IT IS FURTHER ORDERED that the Commission SHALL SEND a copy of this Report and Order, to Congress and the Government Accountability Office pursuant to the Congressional Review Act, see 5 U.S.C. 801(a)(1)(A).

List of Subjects in 47 CFR Part 90

Radio

FEDERAL COMMUNICATIONS COMMISSION.

Gloria J. Miles,
Federal Register Liaison Officer.
Office of the Secretary.

For the reasons discussed in the preamble, the Federal Communications Commission amends 47 CFR part 90 as follows:

PART 90—PRIVATE LAND MOBILE RADIO SERVICES

1. The authority citation for part 90 continues to read as follows:

AUTHORITY: Sections 4(i), 11, 303(g), 303(r), and 332(c)(7) of the Communications Act of 1934, as amended, 47 U.S.C. 154(i), 161, 303(g), 303(r), 332(c)(7).

2. Section 90.20 is amended by revising paragraph (d)(80) to read as follows:

§ 90.20 Public Safety Pool.

* * * * *

(d) * * *

(80) After December 7, 2000 this frequency is available primarily for public safety interoperability only communications. Stations licensed prior to December 7, 2000 may continue to use this frequency on a co-primary basis until January 1, 2005. After January 1, 2005, all operations will be secondary to co-channel interoperability communications. Analog FM emission shall exclusively be used for operation on the VHF and UHF interoperability channels.

* * * * *

3. Section 90.203 is amended by revising paragraphs (i) and (j)(1) to read as follows:

§ 90.203 Certification required.

* * * * *

(i) Mobile/portable equipment capable of use in the 806-809/851-854 MHz band segment and submitted for certification thirty or more days after publication of a summary of the *Report and Order*, (FCC 16-48, released April 25, 2016) in PS Docket

13-209 in the Federal Register must have the capability to operate in the analog FM mode on the mutual aid channels designated in § 90.617(a)(1) of the rules.

(j) * * *

(1) Applications for certification of mobile and portable equipment designed to transmit voice on public safety frequencies in the 150–174 MHz or 450-470 MHz band will be granted only if the mobile/portable equipment is capable of operating in the analog FM mode on the nationwide public safety interoperability channels in the 150–174 MHz band or 450-470 MHz band, as appropriate. (See § 90.20(c), (d)(80) of this part.)

* * * * *

4. Section 90.210 is amended by adding footnote 6 to the entry for 806-809/851-854 in the Applicable Emission Masks table to read as follows:

§ 90.210 Emission masks.

* * * * *

Applicable Emission Masks

<u>Frequency band (MHz)</u>	<u>Mask for equipment with audio low pass filter</u>	<u>Mask for equipment without audio low pass filter</u>
* * *	* * *	* * *
806-809/851-854 ⁶	B	H
* * *	* * *	* * *

* * * * *

⁶ Transmitters utilizing analog emissions that are equipped with an audio low-pass filter must meet Emission Mask B. All transmitters utilizing digital emissions and those

transmitters using analog emissions without an audio low-pass filter must meet Emission Mask H.

5. Section 90.617 is amended by revising paragraph (a)(1) to read as follows:

§ 90.617 Frequencies in the 809.750-824/854.750-869 MHz, and 896-901/935-940 MHz bands available for trunked, conventional or cellular system use in non-border areas.

* * * * *

(a) * * *

(1) Channels numbers 1–230 are also available to eligible applicants in the Public Safety Category in non-border areas. The assignment of these channels will be done in accordance with the policies defined in the Report and Order in Gen. Docket No. 87–112 (See § 90.16). The following channels are available only for mutual aid purposes as defined in Gen. Docket No. 87–112: channels 1, 39, 77, 115, 153. Mobile and portable radios operating on the mutual aid channels shall employ analog FM emission.

* * * * *

6. Section 90.619 is amended by revising paragraphs (a)(5)(i) and (c)(6)(i) to read as follows:

§ 90.619 Operations within the U.S./Mexico and U.S./Canada border areas.

(a) * * *

(5) * * *

(i) Channel numbers 1–230 are also available to eligible applicants in the Public Safety Category in the Canada Border Regions. The assignment of these channels will be done in accordance with the policies defined in the Report and Order of Gen. Docket No. 87–112 (See § 90.16). The following channels are available only for mutual aid purposes

as defined in Gen. Docket No. 87–112: Channels 1, 39, 77, 115, 153. Mobile and portable radios operating on the mutual aid channels shall employ analog FM emission.

* * * * *

(c) * * *

(6) * * *

(i) Channel numbers 1–230 are also available to eligible applicants in the Public Safety Category in the Canada Border Regions. The assignment of these channels will be done in accordance with the policies defined in the Report and Order of Gen. Docket No. 87–112 (See § 90.16). The following channels are available only for mutual aid purposes as defined in Gen. Docket No. 87–112: Channels 1, 39, 77, 115, 153. Mobile and portable radios operating on the mutual aid channels shall employ analog FM emission.

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